

SATURDAY, JUNE 6, 1874.

## ORIGINAL LECTURES.

### CLINICAL LECTURE.

#### OUR EYES—HOW TO TAKE CARE OF THEM.

*Abstract of a Lecture delivered at the University of Pennsylvania,*

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#### LECTURE II.

GENTLEMEN,—At my last lecture I called your attention to three types of eyes—the emmetropic eye, which in a state of rest is able to focus parallel rays of light upon the rods and cones of the retina; the hypermetropic eye, which we saw was too short in its antero-posterior axis, and parallel rays of light were, in consequence, intercepted before reaching their principal focus, thus giving indistinct vision; and finally, the myopic or short-sighted eye, which was too long in its antero-posterior axis, so that parallel rays, after reaching their principal focus, crossed over before reaching the retina, and objects were here again seen indistinctly. It is principally to this latter type, the myopic, that I desire to call your attention to-day.

Long ago, Professor Edward Jaeger, by careful ophthalmoscopic examinations of a considerable number of new-born children, proved that the majority are at birth slightly myopic; and his observations upon the cadaver show that this is dependent on the undue convexity of the lens, which in the foetal state having been quite globular has not yet assumed its proper form. Later it becomes less convex, so that myopia becomes emmetropia, and the already emmetropic eyes become hypermetropic.

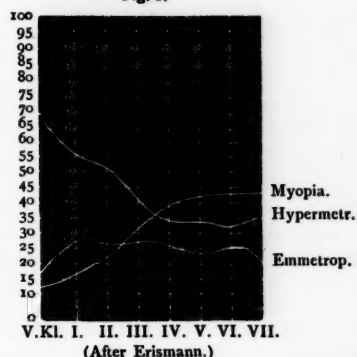
The serious troubles attendant upon myopia, and its evident tendency to increase in degree, have led many observers to investigate minutely the causes which were active in its production and increase. Dr. Cohn, of Breslau, showed, by the examination of the eyes of over ten thousand of the school-children in that city and its vicinity, that there was a gradual but constant increase of myopia from the primary schools up to the universities. Among the children of the primary schools he found but 6.7 per cent. of myopia, while in the gymnasium classes it had increased until nearly thirty per cent. (26.2 per cent.) were myopic. Professor Erismann, of St. Petersburg, also, in a like examination of the eyes of more than four thousand pupils (4358) found a steadily increasing percentage of myopia in going from the lower to the higher classes. He has delineated his results in the diagram—*vide* Fig. 2.

The figures on the left of the diagram indicate the percentage of emmetropia, hypermetropia, and myopia found in the several classes, ranging from the primary or lowest class up to the seventh class;

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the latter representing students in about their eighteenth year. The classes are indicated by the numerals beneath the diagram. The curves of hypermetropia and myopia have for us the greatest interest, inasmuch as that of emmetropia remains

Fig. 2.



nearly stationary throughout. We find, however, that of seventy per cent. of hypermetropes in the primary classes there remain only thirty-five per cent. in the fourth, while the curve of myopia, starting with but twelve per cent., mounts rapidly and continuously, until at the eighteenth year we find that nearly forty-five per cent. of the pupils are myopic.

Now, gentlemen, what does all this mean? Let me tell you at the outset that a near-sighted eye is usually a diseased eye, and the above-quoted results of Cohn and Erismann show us that this disease is in the vast majority of cases either acquired or increased during adolescence.

If you look by means of an ophthalmoscope into a normal eye, you will see, as the most striking object in the fundus, the entrance of the optic nerve, which is here presented to us, as it were, in an optical transverse section. The optic disk then in the normal eye appears as a more or less perfect circle bounded by a thin whitish line,—the so-called sclerotic ring; outside of this again is in many eyes, a partial rim of black,—the choroid ring; beyond this again the eye-ground presents a peculiar reddish-brown color and a stippled appearance, mainly due to the even pigmentation of the sexagonal epithelium of the choroid. The color of the disk is of a delicate pinkish red, owing to the capillaries ramifying in the nerve-tissue. A little to the nasal side of its centre there emerge from it the central artery and vein of the retina, which immediately divide into branches, spreading throughout the entire retina, the larger twigs, however, avoiding the point of sharpest vision, the macula lutea. This in healthy eyes on the upright image is frequently marked by a small yellow spot at the fovea centralis, surrounded by a circle more darkly pigmented than the rest of the eye-ground. Although, as before mentioned, this portion is avoided by the larger arteries and veins of the retina, it is most abundantly supplied with capillaries. The colored diagram which I have just shown you gives a clear idea

of the appearances. I wish you to look at it with sufficient care to impress its details carefully in your minds, that you may the better appreciate the anatomical changes depicted in myopic eye-grounds. In slight cases of myopia you will observe that the disk is more capillary, and that certain changes have set in on the temporal side. These at first consist of a disturbance of the choroid pigmentation—in places black, in others lighter than usual, the surface often presenting a ridgy or ploughed-field appearance. The area affected by these changes is usually cone-shaped, the apex pointing towards the macula. The choroid tissue at this point finally undergoes complete atrophy, its vessels disappear, its pigment is absorbed, and we have a thin layer of transparent membrane, through which we obtain a bright white reflex from the sclerotica. But the catalogue of pathological changes by no means stops here; the sclerotica now becomes softened by the long-continued chronic inflammatory processes in the vicinity, and bulges outward under the intraocular pressure, constituting the so-called staphyloma posticum. Inflammatory changes also take place in other portions of the choroid, as, for example, absorption of the epithelial pigment and atrophic patches of greater or less extent, accompanied by vitreous opacities. The vitreous opacities of course cause more or less hazy vision, the local atrophies blind spots (scotomata) in the field. These blind spots only too frequently occur at the macula, and thus destroy all useful vision, or the changes are accompanied by an exudation of serum lifting up the retina from the subjacent choroid, and thus detached it is incapable of long continuing its functions, and the patient becomes totally, hopelessly, blind.

This, gentlemen, is certainly a very serious state of affairs; but I would not have you believe that in all cases does myopia end thus disastrously. By no means is this the case; but in the vast majority of instances where it exists to any considerable degree there is impairment of vision; and such sad cases as I have above described, with either total blindness or what practically for all ordinary employments of life amounts to the same thing, are of only too frequent occurrence, and form one of the opprobria of ophthalmic surgery.

Such being the serious consequences of myopia and its marked tendency to progression, it becomes important to know the causes which are fruitful in its production and increase, that we may as far as possible prevent them.

If an eye be used continuously it becomes congested, just as do all the other organs of the body with physiological use: *e.g.*, in the stomach during digestion the mucous membrane becomes red and congested in the performance of its function—the secretion of the gastric juice; and, as every one knows, the muscles during muscular activity are supplied with increased quantity of blood, which, if long continued or frequently repeated, leads to their rapid increase in size. So it is with the eyes. During their use the choroid and retina become congested—red, from the increased flow of blood to the part. This physiological congestion during the performance of function is the rule with all the

organs of the body, and, like all physiological processes, lapses once more into comparative quiet when the normal stimulus is withdrawn.

The result, however, is quite different when even *normal* stimuli to organic functions are too vigorously applied or too long continued,—when *use* passes into *over-use*. Then what was at first a *physiological* congestion may become the foundation of *pathological* change.

Pre-eminently is this true with our eyes after long-continued use for near work, for there is then required a protracted strain upon the accommodation and convergence. A normal eye, however, under suitable conditions, may even undergo protracted use and experience no injury, the congestion subsiding entirely under rest. When subjected, however, to continuous use under unsuitable conditions, the result may be different, and these unsuitable conditions are too frequently represented in our schools, where from insufficient light or badly-constructed seats and desks the children are compelled to hold their books too near the eyes, thus necessitating an undue strain upon the ciliary muscle and the internal recti, and causing congestion of the eye. The above-named muscles, also, by their conjoint action increase the intraocular pressure, and cause a gradual lengthening of the antero-posterior axis by the giving way of the eyeball at its weakest point, which experience proves to be the region of the optic nerve entrance. At this point and usually at the outer side of the nerve the sclerotic coat is bulged backward, undergoing a corresponding thinning; the choroid, too, loses its pigment and becomes atrophied, causing this protuberant portion of the eyeball to become translucent.

Then, too, the congestion may be increased by position, the blood gravitating to the eyes when the head is bent strongly forward. You are all familiar with the varicose veins of the lower extremities, which so frequently result from too long standing, the coats of the veins distending under the continuous pressure of the column of blood. We have also a striking illustration of the same in inflammations of the extremities, and in the severe pain which ensues when such inflamed parts are allowed to remain long in a depending position. These are but illustrations of the blood gravitating to dependent parts; and if we hold our heads downward the rapid flushing of the face and suffusion of the eyes from stooping are matters of daily experience with us all. This condition is largely aided by anatomical conditions. When the head is bowed forward the neck is flexed, and with it the jugular veins. The return-circulation through them is thus retarded, leading to undue fullness of the lateral sinuses of the brain, and thus backing up the blood in the ophthalmic veins, and consequently congesting all the internal tunics of the eye. Thus position may promote congestion and softening of the choroid and sclerotic coats, and help on pathological changes within the eyeball.

Now, gentlemen, if such causes lead to pathological changes in a sound eye, how much greater danger do they present to a sick one! Thus, starting with a myopic eye, which, as I have told you, is

usually an unsound eye, how much more surely and rapidly will they augment the already existing weakness, and how important that every precaution should be used to obviate its increase!

But little attention has been paid to this important branch of hygiene in our schools, counting-rooms, and workshops. In our schools the children are too frequently compelled to spend the school-hours sitting at desks in which no regard has been paid to the relation between the height of the desk and seat: thus, for example, the chair being so high that the child cannot support its feet upon the floor, it seeks to avoid the fatigue of sitting upright without support, and, in order to bring its eye sufficiently near to the book, bends forward and rests on the desk; or, on the other hand, the desk is relatively too high, and the book thus forced up uncomfortably near to the eyes causes an unnecessary strain upon the accommodation and convergence, resulting in the chain of events I have described to you. Another source of great evil is insufficient light, not only in our schools and churches, but in the buildings devoted to the various mercantile and mechanical pursuits. We all know how in reading by twilight we are forced to approach the book to the eye in order to compensate for the indistinct vision by the larger retinal images, and thus at the same time cause increased strain upon the eye by the accommodation and convergence for this nearer point. The same causes are operative to a less degree in every badly-lighted room, and to make sure of a good light there should be at least three hundred square inches of glass allotted to each scholar in the room, and much more than this where the light is excluded by artificial or natural causes,—e.g., high buildings close at hand, trees, etc. There should also be a frequent change of occupation during study-hours,—thus, from close application over books to other exercises, as recitations, lecture, intermission, etc. I have spoken principally of children in our schools, because it is here that we can accomplish the most good; but in our workshops and counting-rooms, factories, etc., the employees are continually working with insufficient light, and here too there is ample room for reform.

Ordinarily, in reading, the book should be held at from 12" to 14" from the eye; and to enable us to do this we must not only have a good light, but the type must be distinct and of a sufficient size. Putting small type into the hands of our school-children is false economy. Suppose, however, that your patient is unable to read at this distance (12"—14"), that he has become near-sighted, etc., that the ophthalmoscope shows an abnormally red nerve and a commencing or perhaps tolerably developed conus (staphyloma posticum), that the eye is unduly sensitive to a strong light, that it becomes red and painful after use. You have perhaps an example of so-called *progressive myopia*, and one which demands at your hands the most careful attention. In treating such a case, the first indication is to diminish the congestion of the eye by absolute rest. This may be attained by the use of moderately dark smoke-tinted glasses, by putting the ciliary muscles at rest, by repeated instillations

of atropia, and by forbidding all use of the eyes. I say "forbidding all use of the eyes," because although atropia, by paralyzing the accommodation, will effectually prevent all use of an emmetropic or hypermetropic eye, your patient, if he have a high degree of myopia (e.g.  $\frac{1}{2}$  or more), will still be able to read by holding the book at his far point. The use of atropia will, however, successfully combat the cramp of the ciliary muscle so often accompanying this condition, and put it in a state of complete rest, and the degree of myopia will therefore appear to be diminished. The careful experiments of Dr. Schiess-Gemuseus in a considerable number of cases show, however, that atropinization even continued for six weeks probably does not otherwise alter the state of true refraction. But it undoubtedly by helping to secure absolute rest does give the inflammatory changes taking place at the posterior pole of the eye a chance to subside, and the eye to recover from its irritation.

A very important point in the treatment of myopia is the use of correcting-glasses. When the eyes have become quiet,—i.e., the myopia is stationary,—for the purposes of distinct vision it is essential to wear a concave glass. But a myope, gentlemen, should never be allowed to select his own glass, for he will almost invariably select one which is too strong, to overcome which will always demand an unnecessary strain upon his accommodation, and thus become a source of danger to his already weakened eyes. For distant vision he will require a glass of sufficient strength to correct entirely his myopia,—e.g., if by examination you have ascertained his myopia to be  $=\frac{1}{2}$  in order to see distant objects distinctly, he will require a concave glass of twelve inches focus ( $-\frac{1}{12}$ ); with this, if his acuteness of vision be unimpaired, he should be able to see distinctly No. XX. of Snellen's types at twenty feet. It now becomes an important question to decide whether he shall wear the same glasses both for distant and for near work. While they correct his eyes for distance, it is only by an effort of the accommodation that he can see near objects distinctly. If he is young, with a good range of accommodation, if the choroidal changes are not marked, and if there is no marked tendency to progression, I am in the habit of allowing him to use the same glass for all purposes. If on the other hand the patient has reached middle life, or has a myopia still tending to increase, you must give him two pairs of glasses—the one for distance, which, as we have seen, entirely corrects his short sight, the other of sufficient strength only to place his far point at a convenient distance for his work. For example, if he have a myopia  $=\frac{1}{2}$ ,—i.e., his far point is seven inches from the eyes,—for distance you would prescribe for him  $-\frac{1}{2}$ , but for reading or ordinary fine work you would ordinarily want to place his far point only slightly farther from his eye,—e.g., to remove it from 7" to 14". In order to accomplish this, you would subtract the *desired* far point from that already existing, which in the case we have supposed is 7"; therefore  $\frac{1}{2} - \frac{1}{14} = \frac{1}{7}$ , so that in order to give him  $M = \frac{1}{14}$ , or, what is the



same, place his far point at 14", we would prescribe glasses — $\frac{1}{4}$  for his near work.

Thus, gentlemen, we have cast a rapid glance at the causes which in every civilized community are constantly producing defects of sight, and which so uniformly increase the already large number of near-sighted individuals. If I have succeeded in impressing on your minds the fact that near-sighted eyes are usually sick ones, and have secured your co-operation in endeavoring to improve the schools and workshops of your immediate vicinity according to the principles above enunciated, I shall have the satisfaction of feeling that I have done much to diminish the quota of sick eyes among our population.

### ORIGINAL COMMUNICATIONS.

#### ON LIGATURES: AN ATTEMPT TO DECIDE ON THE BEST MATERIAL FOR THE LIGATION OF ARTERIES.

WITH EXPERIMENTS.

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Philadelphia.

(Continued from page 535.)

#### METALLIC LIGATURES.

IN 1814, Dr. Physick, noticing the immunity with which balls were sometimes lodged in the human tissues, was led to propose the use of metallic threads for the ligation of arteries. It does not appear that he ever put his idea into practice; but Levert, of Alabama, in 1828, was induced by his suggestion to make a number of experiments, with the view of elucidating the action of metallic ligatures in the lower animals.

The use of metallic sutures has had such an important influence in bringing about the employment of ligatures of a similar composition, that a few remarks on this subject do not seem out of place. Purmann, of Germany, in the last century, used silver sutures in wounds of the tongue; and Mihles, of England, used silver and gold thread in hare-lip. In this deformity, Percy, of France, used lead, or gold or platinum covered with lead. Dieffenbach, the great German surgeon, in 1826, advised the use of lead wire in staphylophary. In 1831, Mettauer, of Virginia, published a case of ruptured perineum in which the lead suture was successfully employed; and in 1847 he detailed the successful results of the employment of lead wire in vesico-vaginal fistula. In the later operation he had, however, been anticipated by a London surgeon named Gosset, who, in 1834, cured a long-standing case of vesico-vaginal fistula by paring the edges and uniting them with silver wire coated with gold.\*

Marion Sims, of New York, in 1852 began to urge the claims of silver wire as a suture generally, and especially in cases of vesico-vaginal fistula, with such enthusiasm that metallic sutures came into very general use, and may now be considered as established in many operations.† In fact, before

their introduction, the cure of a case of vesico-vaginal fistula was almost, if not quite, unknown. In proof of the unirritating character of silver sutures, Prof. Agnew states that he has known them to remain *in situ* after the operation mentioned for three months without producing the slightest disturbance;‡ and Redfern Davies recorded a case of staphylophary in which a silver suture was left in place for four years with equal immunity.§

Induced by such facts as these, Simpson, in 1858, made use of ligatures of platinum wire in a case of excision of the breast. The wound was closed by metallic sutures, and collodion applied. Healing by granulation ensued, and the ligatures were thrown off during the process of suppuration.|| In the subsequent year, Dr. Emmet, of New York, repeated Simpson's experiment, using silver wire instead of platinum. The result will be given under the proper head.

Iron-wire ligatures were used by Holt, of London, in 1864, in three cases of excision of the breast, one of amputation of the arm, and another of the leg. Twenty-nine ligatures were used, none of which were seen to come away. In no case was union by first intention secured. Iron-wire ligatures, the ends of which were left hanging from the wound, were used in two cases of amputation by Langenbeck. They came away after a longer interval than when silk is used.

#### SILVER LIGATURES.

*Experiments on animals.*—Levert was the first to make experiments with silver and other metallic ligatures. He tied the carotid in two dogs, and the femoral in a third, with silver. In all three cases the wound healed by first intention, and, on dissection, it was found that "the silver had become encysted."¶ He does not state whether the ligatures were found *in situ*, or whether the vessels had been cut through. Gold and platinum acted in the same manner as silver.

Sir James Y. Simpson, in 1858, repeated these experiments, employing silver and numerous other metals. He never published a detailed account of his experiments, but stated, in his work "On Accupressure," that the results corresponded with those of Levert. "The metallic loops remained in their original situation around the obliterated point of the artery, with no apparent tendency to displacement or ejection, and the metallic threads were intimately blended in and among the effused lymph and tissues." He found that none of the metals produced suppuration, while silk almost invariably did.

Kellburne King states that he has repeated Levert's experiments, with similar results.\*\*

But by far the most elaborate experiments on silver wire have been those of Professor Howard,†† on the carotid arteries of sheep. The interesting

\* Lancet, Nov. 29, 1834, p. 345.

† See Agnew on Vesico-Vaginal Fistula, *passim*.

‡ Lectures on the Treatment of Wounds, delivered at the University of Pennsylvania.

§ Lancet, Feb. 28, 1873.

|| Edinburgh Medical Journal, July, 1858, p. 76.

¶ Loc. cit.

\*\* Lancet, October 6, 1866.

†† Op. cit.

character of his observations is unquestionable, though the deductions drawn from them are not to be considered as proven.

Subjoined is a table, giving the results of these experiments. The ligature, as is indicated, was tied with various degrees of tightness. In all cases it caused the formation of a capsule of lymph around the spot to which it was applied, and the artery was closed in every instance.

NO.	DEGREE OF TIGHTNESS OF LIGATURE.	RESULTS OF DISSECTION.	INTERVAL BETWEEN OPERATION AND DISSECTION.
1	Very tight.	Suppuration at point of application. Ligature extruded.	
2	Not quite so tight.	Suppuration at point of application. Ligature on its way to surface.	
3	Tight enough to secure apposition, but not wound artery.	Suppuration at point of application. Ligature on its way to surface. (In these three cases the ligature was applied to the same artery, at short distances from each other.)	22 days.
4	Tight.	Ligature found enclosing a slough in cavity of abscess.	56 days.
5	Artery two-thirds closed.	No suppuration. Ligature <i>in situ</i> , enclosed in a solid mass of lymph.	37 days.
6	Same.	No suppuration. Ligature <i>in situ</i> , enclosed in a solid mass of lymph.	23 days.
7	Same.	No suppuration. Ligature <i>in situ</i> , enclosed in a solid mass of lymph.	10 days.
8	Same.	No suppuration. Ligature enclosed in a capsule. It had divided the external coat, and was in contact with the middle coat; vessel obstructed by a firm clot.	10 days.
9	Same.	No suppuration. Ligature could not be found; some fibro-cellular tissue at point of application; artery occluded.	14 months.
10	Same.	No suppuration. Ligature <i>in situ</i> , in small capsule. Artery solid and hard for some space.	10½ mos.
11	Same.	Same appearance as in No. 10.	13½ mos.
12	Applied so as not to obstruct vessel at all.	No suppuration. Ligature <i>in situ</i> , covered by a thin layer of lymph. Artery not obstructed by clot.	13½ mos.

It will be noticed that in the instances in which the ligature was applied firmly, or even drawn so as to bring the walls of the vessel in apposition, suppuration ensued. In this respect these experiments differ from all previous ones, and from those of the writer. Howard attributes this discrepancy to the alleged fact that sheep approach more nearly to man in regard to vulnerability; whereas, he says, dogs, on which most of the previous experiments have been made, are notoriously tolerant of injury. That sheep are less tolerant of injury than dogs may fairly be disputed, seeing that in all of Howard's experiments the wound healed by first intention; whereas, in Levert's dogs, the reverse was frequently the case. Moreover, Simpson's experiments were made on a large variety of domestic animals, yet his results agree with Levert's.

When we examine these experiments of Howard's more closely, we see that they are not in all respects fair. Thus, the first three were made on the same vessel, the ligatures being applied within a short distance of each other, and the sheath being necessarily much disturbed; hence we cannot wonder at

suppuration ensuing. If, then, we eliminate this unfair experiment, we have only one instance in which the tightly-drawn silver caused suppuration, and that is scarcely enough to support the entire weight of Dr. Howard's theory, that the firm application of the silver ligature is the sole cause of the mischief which follows its use.

The remaining eight experiments were not altogether successful in proving that the slack silver ligature will remain *in situ*; for in one, at the end of ten days, the external coat had been divided, and in another, when the parts were examined at the end of fourteen months, the ligature could not be found, having evidently worked its way to the surface.

Professor Howard, as a practical application of the results of his experiments, considers that the best way to ligate an artery for aneurism is to diminish its calibre two-thirds with a short silver ligature. The single case in which this plan was tried certainly did not terminate encouragingly, for the man died of hemorrhage.

#### Experiments of the Writer.

*Exp. X.*—A coil of silver wire, eighteen inches long, was placed in the peritoneal cavity of a cat, and the wound closed with one deep and three superficial silver sutures. The wound healed by adhesion, and the superficial sutures dropped out without suppuration. A hard swelling formed at the spot, and in fifty-nine days its apex opened and discharged a little pus, and in a few days healed again.

On the seventy-third day, the animal was dissected. The coil of silver was entangled in the omental layers, surrounded by an indistinct transparent membrane. The swelling at the site of the wound consisted of a mass of lymph enclosing in its centre a little pus and the deep suture, which was long and sharp-pointed.

*Exp. XI.*—A portion of the muscular mass forming the thigh of a cat was surrounded subcutaneously with silver wire. Profuse suppuration ensued, and on the twenty-fifth day as much of the wire as possible was taken out. It was much bent and twisted. The parts now healed.

On the seventy-fifth day, dissection revealed a piece of wire about an inch long imbedded in the muscle. No traces of a cyst existed.

*Exp. XII.*—A small coil composed of one foot of silver wire, so disposed as not to present any sharp points, was placed under the integument of a cat's shoulder, and the wound closed by silver sutures. The incision healed without suppuration; the sutures were removed on the tenth day. An abscess formed, and burst on the twenty-eighth day, giving exit to a small quantity of pus. In a few days more the silver was extruded, after which the ulcer immediately healed.

*Exp. XIII.*—Small coils (made as nearly as possible of the same bulk) of the following materials were placed in cavities under the skin of the side of a large cat, each opening being closed with a stitch of the corresponding material: silver, lead, iron, saddler's silk, carbolized silk, linen thread, catgut of the thickness of saddler's silk, carbolized catgut of the same dimensions, and carbolized catgut a size thicker; the wounds all healed without suppuration.

In forty-two days the animal was dissected. The silver was enclosed in the cavity of an abscess; the thick carbolized catgut was not present, having been extruded by suppuration on the tenth day; a few shreds of the other two pieces of catgut (carbolized and non-

carbolized) were found enclosed in small cysts. The lead, iron, linen, and both kinds of silk were each enclosed in a very thin transparent capsule, and had not caused the slightest irritation.

*Exp. XIV.*—The carotid of a dog was tied firmly with silver wire. The wound was sewed up with a continuous suture of carbolized catgut. On the fourth day it was necessary to cut several stitches to allow some pus and serum to escape, after which the wound healed rapidly. In fifty-three days the parts were examined. The ligature, enclosed in an indistinct cyst, lay immediately beside the artery, which was slightly indented at the point of ligation, and after being laid open was found to be obliterated to the extent of three lines.

*Exp. XV.*—The carotid of a cat was tied firmly with silver. The wound was closed with a continuous suture of hemp; it healed slowly, from the animal tearing out the suture.

In twenty-seven days the parts were examined. The ligature had nearly cut through the vessel. It was covered with a thin pellicle of organized lymph.

*Exp. XVI.*—The carotid of a cat was tied firmly in two places, one-quarter inch apart, with silver wire, and divided between the ligatures. The incision, which had been closed by a continuous stitch of fine sewing-silk, united by first intention.

In thirty-six days the animal was dissected. The silk suture was still in place, having created no irritation whatever. The ends of the vessel were united by a band of organized lymph about half an inch long. The lower ligature had cut its way through the artery, and was lying near it enclosed in a thin transparent cyst; the upper ligature still surrounded the vessel, and was enclosed similarly.

*Exp. XVII.*—The carotid of a cat was surrounded in two places with silver wire drawn with sufficient firm-

ness merely to diminish the calibre of the vessel two-thirds. The wound was treated as in the last experiment, and with the same result.

In fifty-one days the parts were examined: the upper ligature was still *in situ*; the lower had cut its way through the artery, and was lying near it; the position of its application was shown by a delicate cellular interval; both ligatures were covered by a thin membrane.

*Exp. XVIII.*—The left common iliac and the abdominal aorta of a cat were each surrounded by a silver ligature, applied so as not to stop pulsation, but, so far as could be guessed, to diminish the calibre about two-thirds. The sheath of the vessels was not disturbed except just at point of ligation. The inguinal incision was closed by silver sutures; slight superficial suppuration ensued, but healing was complete in a few days.

In sixty-three days the parts were examined; a large cyst was present at the point of ligation. On opening, it was found to contain imperfectly laminated blood-clots, and lying loose at its bottom was the aortic ligature. The aorta communicated with the cyst, and was patulous in both directions. The iliac ligature was found loose in a small cavity in the side of the cyst; it had divided the vessel, which, however, was obliterated.

#### RESULTS OF THE USE OF SILVER LIGATURES ON MAN.\*

1. *Ligation of Arteries in their Continuity.*—Stone, of Louisiana, in 1859, was the first to make this application of silver, but without decisive results, on account of the speedy death of his patient from dysentery. In the following table will be found the details of all the cases published in which silver wire has been applied to arteries in their continuity.

NO.	OPERATOR AND REFERENCE.	AGE.	ARTERY TIED.	DISEASE.	SUBSEQUENT HISTORY OF THE CASE.
1	F. Maury. Phila. Med. Times, March 29, 1873, p. 404.	52	Right subclavian (third part).	Axillary aneurism.	The degree of tightness of the ligature is not stated. The man did well until the eleventh day, when secondary hemorrhage occurred. During the first and second attacks he lost more than a pint of blood; during the third, which occurred on the same day, the blood gushed out in a full stream, and in about three hours the man died. "The post-mortem showed the ligature in good position, and just ulcerating through. The subclavian artery was in part filled with a fibrinous coagulum, and partly with a soft clot, evidently more recent, from the innominate to the ligature." It is said that the aorta and heart were in an advanced stage of fatty degeneration; but, by a strange omission, the condition of the walls of the ligated artery is not given.
2	T. Smith. Holmes' System of Surgery, vol. iii.		Radial.		The wire had to be cut away in about three months, on account of "the inconvenience it caused the patient."
3	Stone. Am. Jour. Med. Sci., Oct. 1859, p. 570.		Common iliac.	Inguinal aneurism.	Wire drawn with sufficient firmness merely to stop pulsation. Death from dysentery on the twenty-sixth day. No autopsy.
4	Pollock. Lancet, Sept. 22, 1866, p. 328.	51	External iliac.	Femoral aneurism.	Ligature drawn tight enough merely to bring sides of vessel in contact. In three days the man died from bronchitis. On autopsy, it was found that the wound had not commenced to heal. Coats of vessel perfect. Decolorized and partially adherent clots above and below the ligature.
5	C. H. Mastin. New Orleans Med. and Surg. Reporter, Sept. 1866.		External iliac.	Inguinal aneurism.	The wire was tied with a double knot tightly enough to stop pulsation only; the ends were bent down, and turned into the sheath. The wound healed by first intention. Perfect recovery ensued. Nothing has ever been seen of the ligature, though the man is still under observation.
6	T. Holmes. Lancet, Sept. 22, 1866, p. 328.	43	Femoral.	Traumatic popliteal aneurism.	Wire drawn tightly enough to stop pulsation merely. On the seventh day the wound was nearly, and on the twelfth quite, healed. On the fifteenth day he left the hospital. Nothing was ever seen of the ligature, though the man was under observation for two years.
7	Kellburne King. Lancet, Oct. 6, 1866, p. 400.			Aneurism.	The writer merely states that he ligated the artery with silver, and that the operation was satisfactory so far as the ligature was concerned, but that the patient died of rupture of the sac.
8	Kellburne King. <i>Loc. citat.</i>			Aneurism.	No details are given, except that hemorrhage occurred on the eighth day; that silk ligatures were applied above and below the silver ligature, and the patient recovered.

\* Except in some cases of Erichsen's, which will be mentioned, where silver ligatures were used, they were always cut short and buried in the wound.



NO.	OPERATOR AND REFERENCE.	AGE.	ARTERY TIED.	DISEASE.	SUBSEQUENT HISTORY OF THE CASE.
9	Brodhurst. Trans. Path. Soc. London, vol. xviii. p. 67.	46	Femoral.	Femoral aneurism.	The ligature was applied "loosely." On the seventh day, wound nearly healed; on the tenth day hemorrhage occurred, but was controlled by a pad for a few hours, when it recurred. The artery was now tied higher up with two silver ligatures. On the twelfth day hemorrhage recurred, and a silk ligature was applied on the proximal side of wound. On the thirteenth day the man died of exhaustion. On autopsy, it was found that the ligature first applied had cut its way seven-eighths through the vessel, the distal orifice of which was patulous. The three other ligatures were intact on the proximal end of the vessel, which was occluded. The arterial system was degenerated.
10	Benjamin Howard. Trans. Am. Med. Assoc., 1872, p. 559.		Femoral.	Popliteal aneurism.	The wire was drawn so as to diminish calibre of artery two-thirds. Wound healed by first intention, except at one end; pulsation ceased in aneurism. On eleventh day, walked a considerable distance. On seventeenth day, hemorrhage. On nineteenth, a silk ligature was applied below Poupart's ligament. The history of the case from the seventeenth day is very imperfect, but the reporter was informed that five or six days after the application of the silk ligature the man died of hemorrhage.
11	Redfern Davies. Lancet, Feb. 28, 1868, p. 233.		Popliteal.	Elephantiasis Arabum.	The ligature came away on the twenty-first day. The patient recovered so far as the operation was concerned.

Several additional cases are referred to in Prof. Gross's work on Surgery, and the reader is left in doubt as to whether the ligature was encysted or not. In a conversation with this author, he stated as the result of his experience that the ligature came to the surface, though after a longer interval than in the case of silk.

In Mr. Holmes's "Lectures on Aneurism" he states that the only satisfactory case on record is his own (No. 6). If we also except Dr. Mastin's case (No. 5), of which the talented lecturer seems strangely ignorant, certainly our experience with silver ligatures in the treatment of aneurism is anything but satisfactory.

Of the remaining nine cases tabulated, three (Nos. 3, 4, and 7) died of causes unconnected with the ligature; secondary hemorrhage occurred in four cases (Nos. 1, 8, 9, and 10), in three (Nos. 1, 9, and 10) of which it proved fatal; in one case (No. 11) the ligature came away just like the ordinary ligature; and in another (No. 2) it had to be cut out.

**2. Silver Ligatures in the Abdominal Cavity.**—Peaslee states that he has seen several attempts to apply silver wire to bleeding vessels in ovariectomy, but without success; the ligature slipped off as soon as applied.\* Sims informs us† that for the last ten years he and his colleague, Dr. Emmet, have, as a rule, in this operation, secured the pedicle with silver wire and returned it to the abdominal cavity without any bad result ensuing. The latter gentleman has published the details of two cases thus treated, both recovering without a single bad symptom.‡ However, the evidence in favor of silver thus applied is not so strong as that on the side of silk; for in the first case we have little more than a general assertion, while in the latter we are supplied through the industry of Peaslee with the fullest information. Prof. Agnew mentions a case which came under his observation in which he attributes the death of the patient to the application of a silver ligature to a wounded omental artery.§

\* Op. cit.

† New York Journal of Medicine, December, 1872.

‡ American Journal of Obstetrics, 1872.

§ Lecture on Wounds of the Abdomen, delivered at the University of Pennsylvania.

**3. Application of Silver to Arteries divided in Operations.**—Platinum ligatures, as we have seen, proved not a whit superior to silk in the hands of Simpson. In Dr. Emmet's case, already referred to, silver was used with somewhat better success, though we are left ignorant of the ultimate disposition of the ligatures.

The breast of a woman, aged 31, was excised for scirrhus. Eleven silver ligatures were applied by twisting. The wound was accurately closed by whipped silver sutures. Healing by adhesion occurred nearly throughout, but the dependent angle of the wound required to be kept open to allow of the escape of some pus, which the author thinks was formed "in consequence of the death and suppuration of the portion of tissue strangulated by the ligature." On the eighth day a portion of the suture midway was found to be torn out. The fissure thus formed healed by granulation, so that by the fifteenth day the wound was entirely healed. The suture was not removed until forty-three days had elapsed. The most careful examination failed to reveal the position of any of the ligatures, though none had escaped.||

Dr. F. D. Lente has published a similar case:

Mrs. M., breast removed, for scirrhus; ten silver and one silk ligatures applied; wound closed by five silk sutures. On the eleventh day a small abscess was opened; on the fifteenth day there was slight discharge from the lower end of wound, the remainder of which was healed. On the fifty-fifth day "a loose wire was felt floating about in situation of abscess," and was removed by a small puncture.||

In amputations of the extremities silver ligatures have been used by Erichsen and Lente. The former writer gives his experience thus:

"If the ends of the wire were left out of the wound, the noose became imbedded in a mass of plastic matter, did not separate, and, after several weeks, required considerable force to detach and disconnect it. If the ends were cut short, the sides of the wound healed over them; they became encapsuled, but by no means innocuous; in some cases giving rise to severe neuralgia of the stump by pressure on and irritation of neighboring nerves; in others after some weeks causing localized circumscribed abscesses to form."\*\*

|| American Journal of the Medical Sciences, July, 1859, p. 120.

¶ American Journal of the Medical Sciences, April, 1869, p. 309.

\*\* System of Surgery, vol. i. p. 281.

Our talented countryman, Dr. F. D. Lente,\* has given us more detailed information on this portion of the subject. A short account of his cases is given, that the reader may be enabled to judge for himself of the merits of the method:

1. Re-amputation of the thigh—nine short silver ligatures applied. Six hours afterwards stump bled profusely. An assistant opened the stump and tied four or five vessels with silk. He saw nothing of the silver ligatures, and *thought* that the vessels he tied were not those to which the silver had been applied. On the fifty-first day, the note states, the wound was healed and gave no trouble.

2. Amputation of fore-arm—six short silver ligatures applied. Lips of wound brought together by fine silk sutures. Antiseptic dressing. "Considerable oozing of dark, bloody matter" while dressing wound. Eighth day, wound suppurating; oozing of dark blood continues. Thirty-ninth day, stump soundly healed and gives no trouble.

Of the third case (amputation of leg), and the fourth (of the arm), the note merely states that suppuration of the wound occurred, and that recovery was slow.

It will be seen that the first two of these cases were complicated by secondary hemorrhage.

In one of them, indeed, one cannot avoid a strong suspicion that some of the ligatures slipped from the ends of the vessels. It is not stated that the wires did not come away, though we are led to infer that such was the case.

Finally, we are left in the dark as to whether any subsequent trouble, such as Erichsen indicates, occurred.

Dr. Lente was kind enough to respond to inquiries concerning his subsequent experience with silver ligatures, substantially to the following effect:

1. Their use requires the aid of an intelligent assistant.
2. He does not claim that "any larger proportion of cases heal by first intention than by other methods."
3. In amputations "most of the ligatures come away." They may easily escape notice on account of their small size. "In other operations, when union by first intention fails, the number that comes away depends on the amount of suppuration and of granulating surface. The proportion is very small."†

#### LEAD LIGATURES.

As with silver, Levert was the first to experiment with lead-wire ligatures.

1. He tied the carotid of a dog firmly with lead wire. The wound healed by granulation. On dissection, in forty-three days, the lead was found encysted near the artery, which was entirely removed for the space of one-half inch. Both ends of the vessel were firmly sealed with organized coagula.

2. The same experiment repeated. On dissection, after twenty days, the ligature was found encysted and surrounding the remains of the vessel. In three similar experiments, identical results were obtained after intervals respectively of twenty-nine, twenty-two, and twenty-seven days.

Howard obtained opposite results in his experiments with sheep, but, as will be seen, the ligatures, except in one instance, were quite bulky. Consequently, his observations cannot be accepted as fair evidence in favor of the idea that lead is more irritating to the tissues than silver.

\* Loc. cit.

† MS. letter.

1. Thick lead wire was applied to carotid, and drawn so as to bring its walls in contact. The ends of the ligature were enclosed in perforated shot, and the wound closed. In twenty-seven days, examination showed the ligature, enclosing a slough, in an abscess, which was making its way to the surface.

2. A thin lead band was used, with a like result after thirty-seven days.

3. Carotid closed two-thirds by lead ligature, with a like result after thirty-six days.

#### Experiments of the Writer.

*Exp. XIX.*—A coil composed of one foot of lead wire was placed under the skin of a cat's shoulder, and the incision closed by a single lead suture. The wound healed, and the suture dropped out without suppuration. On examination, fifty-one days after, the coil was found enclosed in a thin transparent cyst.

*Exp. XX.*—The carotid of a cat was surrounded with lead wire, drawn rather loosely. The incision was sewed up with a continuous suture of carbolized catgut, and carbolized dressings applied. In three days wound was suppurating profusely; granulations sprang up, and it was healed by the fourteenth day. On examination, thirty days after, the ligature was found *in situ* within an indistinct capsule. The artery was obliterated.

*Exp. XXI.*—The carotid of a cat was tied firmly with lead wire, and the wound drawn together by lead sutures. It healed by first intention, and the sutures dropped out. On dissection, thirty-one days after, the lead had passed through the artery (which presented no break in its continuity), and was enclosed in the cellular tissue about two lines from it.

*Exp. XXII.*—The carotid of a large dog was tied firmly with lead, and one inch above with catgut (non-carbolized). The sheath was not disturbed in the interval. Hempen sutures were used. They were soon torn out by the animal, so that several days elapsed before the wound was healed. On examination forty days after, neither ligature could be found. The lead had probably made its way to the surface, and the catgut been absorbed. The artery was obliterated between the joints of ligation, but presented no break in its continuity.

*Exp. XXIII.*—Equal bulks of lead wire, silver wire, silk, and carbolized catgut were placed in corresponding positions in the muscles of different cats. In thirty-two days the animals were dissected. The lead was found enclosed in a thin cyst; the silver was also in a cyst, which contained in addition a few drops of pus; the silk was likewise encysted. The carbolized catgut was not present, having escaped by suppuration on the fourteenth day.

#### THE USE OF LEADEN LIGATURES ON MAN.

Professor Agnew applied a leaden ligature to the brachial artery in a case of aneurism of that vessel.† Perfect and rapid recovery ensued, the wound healing by first intention, and the ligature never making its appearance. The happy termination of this case (which is the only one that has come to the writer's knowledge of the use of lead as a ligature in the human subject) makes it desirable that an extended trial should be given to lead in cases of aneurism. Certainly, experiments on animals prove lead to be of an exceedingly unirritating nature.

(To be continued.)

† Lecture on Aneurism, delivered at University of Pennsylvania, course of 1873-74.



# EXTENSIVE INJURY TO THE LARYNX, TRACHEA, AND OESOPHAGUS; AND RECOVERY.

BY C. H. BOGMAN, M.D.,  
Salt Lake City, Utah.

JUNE 18, 1869, I was summoned to attend W. A. P., aged 57, who had attempted suicide by cutting his throat. Two hours subsequent to the attempt I found him held upon the bed by several men, and, with the strength of a maniac, endeavoring to tear open the wounds in his throat.

He was suffering from acute mania, of which the suicidal attempt was the first symptom noticed by his family.

Upon examination, I found two wounds; the superior dividing the larynx for full half its diameter through the thyro-hyoid membrane, and the inferior completely dividing the trachea just below the cricoid cartilage, and also opening the anterior walls of the oesophagus by an incision five-eighths of an inch in length. Both incisions were made with a large-bladed, keen-edged pocket-knife. The large vessels of the neck were uninjured, and the hemorrhage from three small vessels in the inferior flap was controlled by direct pressure.

Having ligated the vessels, and thoroughly cleansed the parts, the wound of the oesophagus was united by three fine silk sutures, the knots being tied in such a manner as to be inside the oesophagus.

The inferior wound of the trachea was then closed by six coarse wire sutures, two placed postero-laterally to prevent their irritating the wound of the oesophagus, two laterally, and two antero-laterally. The superior wound of the larynx was then closed by four wire sutures.

In both cases the sutures were made to include as much as possible of the superlying and attached fibrous and cellular structures, twisted as tightly as possible without strangulation of the included tissues, and the ends cut as short as was consistent with strength and permanence.

The external wounds were closed by silk sutures, and a wet compress covered the whole. Strips of adhesive plaster were applied to the shaven head; their centres being on the occiput, and the head well flexed, their long ends were brought forward, crossed on the breast, and carried round to the lumbar region, the whole being arranged so as to prevent extension or rotation of the head.

He was then well secured, to prevent violence; morphia was exhibited hypodermically, and sedatives and alimients in solution, by means of a flexible tube, carried well into the pharynx. The medical treatment consisted principally of sedatives and tonics.

Recovery was slow and tedious. There was profuse suppuration from both wounds; the mania entirely disappeared on the eighth day, and left him greatly prostrated. The wounds were frequently syringed with the permanganate of potassium in solution.

In September, 1869, the wound was healed, except a small fistule in the thyro-hyoid membrane, through which a probe was readily passed into the larynx. Both voice and deglutition were greatly impaired.

At present (May 15, 1874), with the exception of a peculiar resonance, the voice is unimpaired; articulation is peculiar,—to use his own expression, "as if I had a hot potato in my mouth."

Deglutition is performed easily if the attention is directed to it, otherwise the food "goes the wrong way."

In other respects he is perfectly well. The fistule healed voluntarily; the encysted wire sutures are readily felt in the larynx and trachea. He has had no return of the mania, and expresses himself dissatisfied with the knife as a means of suicide.

## NOTES OF HOSPITAL PRACTICE.

### PHILADELPHIA HOSPITAL.

SERVICE OF PROF. H. C. WOOD.

Reported by E. T. BRUEN, M.D., Resident Physician.

#### CASES OF SCIATICA.

W. S. entered this hospital April 14, 1874, suffering from well-marked symptoms of sciatica. He has been more or less a sufferer for the past two years, while under the most varied treatment in different hospitals. A saline purge was ordered to be given every other day for a week, together with the following:

R Potass. acetat., ʒi;  
Potass. iodidi, ʒii;  
Aq. cinnamom., fʒvi.—M.

Sig.—Tablespoonful t. d.

The daily use of the downward continuous current from eighteen cells was directed in addition; to be applied over the course of the nerve. After the first application of the electricity he said he felt greatly relieved, and in a period of ten days he could walk without pain, and was discharged cured April 30.

G. W., æt. 50, admitted to the ward April 20, suffering from the ordinary symptoms of sciatica, which he stated first attacked him two weeks previously. His pain was so severe that he could only walk with much difficulty, supporting himself with a cane. The continuous current of electricity from eighteen cells was employed, without any other treatment. He felt markedly benefited after the first two applications of fifteen minutes each, and could walk without his cane; at the expiration of ten days he was discharged perfectly cured.

#### CASE OF TAPE-WORM.

W. S., æt. 26, native of England, admitted to the hospital April 30, 1874. He states that he has had a tape-worm for some years; he has been in this country about three months, and during this time he has passed a number of links of it at intervals. He has been subjected to treatment for his worm several times in different London and Liverpool hospitals, and although large portions of the tape-worm had been obtained, the head had never been passed.

His occupation abroad was that of a game-keeper, and according to his own statement he has never eaten raw pork, beef, or meat of any kind. He is a strong man, his health having been only slightly affected; he complains, however, of headache, a sense of pain or uneasiness in the abdomen, with depression of spirits and nervousness, which prevent him from working; he has also a ravenous appetite. He was kept a few days in the house on restricted diet, after which the following treatment was instituted. A dose of salts (Rochelle), one ounce, was given one evening at five o'clock. No supper was allowed, excepting a glass of milk. The next day the following prescription was administered:

R Granati rad. cort.,  
Pepo, aa ʒss;  
Ergotæ, ʒss;  
Ext. fil. mas, ʒi;  
Pulv. acaciæ, ʒii;  
Ol. tiglli, gtt. ii.—M.

Et ft. emulsion.

It occasioned slight nausea, and operated three times freely.

On examining the stool a tænia solium eighteen feet long was found expelled in a single piece rolled in a ball, knotted in at least ten knots. The links seemed to have parted close to the head, as they were very

small, but the head itself was not found, though the stools were examined with great care. As the man passed no more links, he was discharged at the end of a week.

## TRANSLATIONS.

TRACHEOTOMY PERFORMED BY MEANS OF THE ACTUAL CAUTERY.—M. de St. Germain read before the Académie de Médecine, at a recent sitting, an account of the operation for tracheotomy as performed by him recently.

After some remarks relative to various experiments which he had made on different animals, M. de St. G. went on to say that this was the first opportunity which had offered for the trial of the procedure in a human being, and then gave the following details:

A child, 3 years of age, admitted to his wards January 26, 1874, for club-foot, was attacked by measles, followed by bronchitis. He was nearly convalescent from this disease, when he presented unequivocal signs of diphtheritic angina. Gray pseudo-membranous plaques appeared on the right tonsil, then on the left; finally, his voice was almost lost, and became decidedly croupy.

This was on February 23. On the morning of February 24 very marked difficulty in drawing the breath was noted, but no cyanosis. The usual treatment was resorted to, but without avail, and by evening the breathing had become much more difficult, and decided cyanosis had manifested itself.

Under these circumstances tracheotomy was determined upon, and the operation was carried out in the following manner. The child was placed upon a mattress-covered table, with his shoulders supported upon a sort of bolster formed of an ordinary pillow tied tightly around an empty bottle placed at its centre. The arms and legs being firmly fixed, an assistant held the head well back, so as to throw the larynx very prominently out. The operator having taken his position on the right of the patient, and having determined as exactly as possible the point corresponding to the crico-thyroid membrane, seized the larynx between the thumb and middle finger, and pressed it firmly on the deeper parts. This manœuvre had the advantage of isolating the larynx absolutely, and of making it perfectly immovable, as well as of rendering tense the overlying integument. (It might be said here that the immobilization of the larynx, during a period relatively quite long, has not the dangers which have been attributed to it. M. de St. G. had been able, in experiments made on various children, to render the larynx immovable without danger during a period three times as long as that necessary to perform tracheotomy.)

The larynx being fixed, the operator seized a small, thin-bladed probe, or rather dull-pointed bistoury, and, having brought it to a cherry-red heat by means of an enameller's lamp, introduced it slowly in a perpendicular direction, cutting from base to point, as had been determined, that is to say, immediately below the thyroid cartilage. Penetration was very easy, and a very slight sensation of resistance overcome indicated that the crico-thyroid membrane had been traversed. Then, the bistoury not having been removed, the cricoid cartilage and one ring of the trachea were divided, when the instrument was taken out. The existence of a very clean wound could then be noted, yielding no blood, and showing, at the deepest part, a black slit, the laryngo-tracheal incision. It might be noted that the usual sounds significant of air entering the trachea were not heard until the two-branched dilator was introduced, when hissing sounds were manifested.

The patient now respired easily, and the canula was

introduced at leisure, and with the greatest facility. When once introduced, however, the canula was found not to act. The cause of this was soon discovered in an enormous plug of false membrane stopping up its lower end. This being removed by coughing the moment the canula was taken out, the latter was again introduced, and secured by the usual methods.

(It may be remarked that during the whole of the operation the patient had not lost a teaspoonful of blood in all.)

The child was removed to a bed, surrounded with hot bottles, and watched with the greatest care. For two days all went well; on the third, however, it was ascertained that false membrane was forming still. The canula having been removed from the wound, the latter was found to present the usual appearance following tracheotomy. From this day the child gradually grew worse, and finally succumbed on the fourth day subsequent to the operation.

The autopsy showed considerable pulmonary congestion and emphysema, also a quantity of false membrane in the trachea, constituting a sort of cast. The wound looked natural, and the cauterization had not affected the lateral or posterior portions of the trachea.

The writer who reported M. de St. Germain's case in the *Gazette Médicale* asks two questions in relation to it. First, whether, if the bistoury should get cold, it might not act simply as an ordinary knife, thus leading to hemorrhage? Second, if, on the other hand, the blade should be a little hotter than usual, might not the cauterization of the cartilages lead to their necrosis? These questions remain to be answered. A. V. H.

TRANSFUSION OF BLOOD IN THE INSANE.—Prof. Meynert (*Wien. Med. Presse*) states that the operation of transfusion was frequently performed in England in the seventeenth century in patients suffering from mental affections, but that it could not be supposed that in such cases, even under the most favorable circumstances, the operation would be attended with favorable results.

In cases of melancholia, however, it might be possible to look for a favorable result from the operation, since the transfused blood might act as an irritant, and, like febrile affections, cause an intermission of the state of melancholy. In three cases in which the operation with defibrinated blood was performed by Redner, the pulse rose from fifty to eighty beats per minute, and two of the patients, half an hour after the operation, felt better, and were more cheerful; but this improvement was but transitory. A quarter of an hour later the pulse could scarcely be felt; vomiting, micturition, and defecation took place, followed by a chill of violent character, and fever of three days' duration. W. A.

INJURIOUS EFFECT OF HUMAN MILK UPON DOGS.—M. Devilliers stated in a report read before the Académie de Médecine on this subject that the researches which he had made proved human milk to possess the quality of rendering dogs rachitic.

Advantage had been taken of this circumstance in the employment of the milk of dogs for the nourishment of young children suffering from rachitis. What the result of this treatment proved to be is not stated; but in the discussion which followed the reading of M. D.'s report it was remarked that this injurious action of human milk had already been observed, in cases where young women had used puppies for "drawing the breast." The animals were observed under these circumstances to succumb speedily.—*Bull. Gén. de Thérap.* A. V. H.

# PHILADELPHIA MEDICAL TIMES.

A WEEKLY JOURNAL OF  
MEDICAL AND SURGICAL SCIENCE.

*The Philadelphia Medical Times is an independent journal, devoted to no ends or interests whatever but those common to all who cultivate the science of medicine. Its columns are open to all those who wish to express their views on any subject coming within its legitimate sphere.*

*We invite contributions, reports of cases, notes and queries, medical news, and whatever may tend to increase the value of our pages.*

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## EDITORIAL.

### CREMATION.

THE question of the advisability of burning the dead is still everywhere the subject of active discussion, and the process appears to be growing in favor. In March of this year there were in Zurich two public meetings of about two thousand persons, for the consideration of the propriety of the adoption of cremation.

The speaker who opened the proceedings at these meetings called attention to the progress which the idea had already made in Switzerland, and stated that in several of the other cantons meetings had previously been held, and that in Bâle several orthodox clergymen had given the idea their approval, owing to the pressing need for all the room that could be made available in that small district. One of the medical professors of the High School then stated the danger to which Zurich especially was exposed. The cemeteries of that city are situated upon hills and cliffs under which lie the dwellings of the inhabitants, and from which the drainage enters into the springs at their base.

Measures were taken at the close of the meeting to form an association to discuss the question, and to ascertain the most suitable way in which a corpse could be burned. Numerous persons of varied social position became members of the society, which numbers over four hundred persons, and agreed that at their death their bodies should be burned. In this canton no opposition to this mode of disposal of the dead is looked for from the authorities. Similar associations

with the same object have been formed in other cities of Europe, in Berlin, Dresden, and quite lately in Vienna, and in the last-named city the authorities have directed an engineer to construct a furnace suitable for the purpose of burning the dead. In London, cremation appears to be a favorite theme with pulpit-orators, some favoring, some decrying it. In the same city a Cremation Society has been formed, and advertises in the *Athenæum*.

According to the *Medical Press and Circular*, a case of ante-mortem burial which occurred recently in France is about to become the subject of a judicial investigation, and will no doubt give a fresh impulse to the new movement. It is stated that about two years ago a young mother, shortly after the birth of her first child, was one evening seized with a fainting-fit, so severe as to be mistaken for death even by the physician, who, considering the great heat prevailing at the time, advised the inhumation of the body within six hours. This suggestion was unhappily adopted, but its frightful results only came to light the other day, when, the young widower having expressed his intention of marrying again, the mother of his dead wife claimed her daughter's body, intending to have it re-interred at Marseilles, where she resides. The vault was opened, and, to the grief and horror of all present, the coffin was found broken, and the corpse lying by its side, with hair and garments torn, and hands bitten through.

AS there are always persons ready to attach personal motives where they do not exist, and also to make personal applications where they are not meant, we want to state plainly that the *Slowtown* letters were admitted to our pages on the express understanding that they should not be personal attacks,—an understanding which, we think, has been carried out, at least so far as concerns the medical gentlemen connected with the canvass. The time seemed auspicious for calling attention to a source of grievous mischief, because the late very earnest, if not bitter, struggle had attracted general attention to it. The organization of our schools is to us about the worst conceivable: all the power being left in the hands of trustees,—self-elected,—representing nobody and responsible to nobody, having, moreover, themselves no direct interest in the schools, and being of very necessity ignorant of the wants of the profession and of the proper methods and aims of medical education. Is it a wonder that at least one trustee stated semi-publicly that one candidate was the best fitted for the place, but that he himself was going to vote for another on private



grounds? We may at some future day have more to say upon this subject, but the pressure on our columns renders present forbearance imperative.

### CORRESPONDENCE.

#### NOTES OF TRANSACTIONS AT THE NEW YORK MEDICAL SOCIETIES.

TO THE EDITOR OF THE PHILADELPHIA MEDICAL TIMES:

SIR,—Among the matters of scientific medical interest recently occurring in our city may be mentioned the researches of certain gentlemen upon the cerebral centres.

Physiologists generally are aware that experimental researches have within a few years been made by Fritsch and Hitzig of Berlin, and Ferrier of London, with a view of proving the existence of, and of localizing, motor centres. Dr. George M. Beard, of this city, assisted by Dr. George B. Fowler, has also engaged in experiments upon the brains of living animals, having a threefold object in view,—namely, to ascertain how far the phenomena first observed by Hitzig and Fritsch, and subsequently by Ferrier, were demonstrable; 2, whether the objection of Dupuy and Canville to the conclusions derived from the German and English experimenters, on the ground that the current was diffused, was sound; 3, to push the inquiry still further, and by independent observation to settle, if possible, some of the questions suggested by the inquiry. The conclusions of Dr. Beard are—1. The living brain responds to electrical irritation, faradaic and galvanic. 2. There are in the brain certain different centres of motion, and probably of sensation. 3. The centres for the muscles of the mouth, neck, and legs appear to be in the anterior portions of the brain. The posterior portion is possibly the centre for special senses. Superficial irritation of the different parts of the cerebellum causes emprosthotonos; irritation of the tubercula quadrigemina causes opisthotonos; irritation of the hippocampi causes no visible reaction. 4. The brain in respect to these centres is symmetrical, and is indeed a double organ. 5. There is in the brain of a rabbit, in the posterior portion, about a quarter of an inch from the median line, a spot in each hemisphere that seems to be a centre for jumping and leaping movements.

Dr. Eugene Dupuy, before the Neurological and Electrological Society, May 18, conducted a series of examinations upon dogs and guinea-pigs, with a view to an examination of the theory of the existence and localization of motor centres in the cerebral hemispheres. The results of his experiments are embodied in the following conclusions. 1. That it is possible by exciting certain points of the cortical layer of the cerebrum to obtain contractions of every limb. 2. That as a rule the fore-limb of the opposite side is affected. 3. That the electric current must be propagated to the base of the cerebrum to excite either the nerves arising from it, or the

base itself, or the pons Varolii. 4. That if the dura mater be electrically excited contractions are obtained in the fore-leg, and generally in that of the opposite side. 5. The fact that the galvanoscopic frog is thrown into a state of contraction when its nerve touches some part of the cerebral mass far from the point excited, confirms the view that the electric current is propagated. 6. Contrary to the effects obtained by Ferrier, Dr. Dupuy has never been able to obtain effects upon the tongue, either of projection or retraction. 7. The whole cortical layer of the cerebrum is probably a centre of reflexion for a certain kind of sensibility capable of exerting a reflex action on motor or sensory nerves, but its preservation is not indispensable for the manifestation of voluntary or even intelligent action. 8. In the animals on which Dr. Dupuy has experimented, contractions of the opposite limbs can still be produced after the ablation of the optic and thalamic lobes and corpora striata of the side opposite to that to which the irritation has been applied. G.

NEW YORK, May 25th, 1874.

### PROCEEDINGS OF SOCIETIES.

#### PATHOLOGICAL SOCIETY OF PHILADELPHIA.

THURSDAY EVENING, APRIL 9, 1874.

THE PRESIDENT, DR. WM. PEPPER, in the chair.

DR. CHARLES B. NANCREDE presented a specimen of *fatty tumor from the region of the scapula*, with photographs and microscopic slides, illustrating its structure, made by Dr. C. Seiler.

Dr. Nancrede read the following history and remarks: "The patient from whom this tumor was removed is a colored washerwoman, aged 37 years, who stated that she accidentally noticed the growth four years ago. It was then small, situated over the right scapula, just beneath the spinous process, was of slow growth, painless, and gave no inconvenience. During the past few months, however, its growth was quite rapid, with occasional stinging pains in the part, and considerable inconvenience caused by its extending down upon the posterior fold of the axilla. The patient had never received any injury to the part. I removed the tumor on the 19th of March, 1874, by the antiseptic method, in its entirety. In eleven days the patient was well, and, I believe that, had I had more faith in this method, the wound would have been soundly healed in half the time.

"I had determined to test the preservative influence of chloral on the first favorable opportunity, and accordingly placed the growth in a solution of about gr. xv of chloral to the ounce of water. It can be seen at a glance that beyond the ordinary maceration which any specimen must undergo in any fluid, there is no alteration or bleaching, for the small capillary vessels supplying the capsule can readily be seen. There is also no unpleasant odor. The microscopic preparations were taken after the growth had stood in the chloral solution some time. I think that most observers have been annoyed to find that after placing specimens in some one of the so-called preservative fluids they were useless for microscopic purposes. This objection evidently does not hold good with regard to chloral. The photographs taken by Dr. Seiler, aided by the specimens under the microscopes, show very beautifully the mode of growth of lipomata. The first

slide is a section of ordinary adipose tissue, and the extreme regularity in size of the component cells will be noted, with few or no interspaces at their angles. In the second, which is a section of the tumor, the great irregularity in size of the cells will be noticed, many being from one-fifth to one-fourth larger by actual measurement than those of normal adipose tissue, while many more are only one-quarter this size. In the third specimen,—mounted in Canada balsam, showing only the cell-walls,—in several places one of the smaller cells is seen situated between several larger ones, its walls much thicker, and studded at various points with masses of germinal matter. In many of the smaller interspaces will also be noted little masses of germinal matter stained deeply by the carmine solution, thus showing them to be newly formed. Owing to their great differences in size, the cells do not assume that comparatively regular pentagonal form seen in the first specimen, but tend to assume one more rounded. These appearances clearly indicate the mode of development of fatty tumors. In consequence of some irritation, there is set up a circumscribed proliferation of the connective tissue in some clusters of fat-cells. This is followed by a fatty infiltration of these newly-formed cells; and we thus have the explanation of the small cells arising between the large ones; for here at the angles the new germinal matter forms, which is gradually thinned out by the pressure of the fat within. This explains, too, the thicker walls of the smaller cells, which are younger, have less fat infiltrated into them, and therefore have their walls less stretched.

"I would now advert to the point of surgical interest in this case,—viz., the method of removal. I followed in its entirety Prof. Lister's method, but used, instead of his cere-cloth, Mr. Lund's antiseptic gauze. As this method has given rise to considerable discussion, and has been as heartily condemned as it has been praised, I will describe the steps. My instruments were all dipped in carbolized oil, made by adding one part of acid to nine parts of oil. The incision was made and the dressing completed under a spray of one part of the acid to forty parts of water, and the wound was closed with carbolized catgut ligatures and antiseptic adhesive plaster. Over the line of the incision several layers of linen steeped in the carbolized oil were laid, over this again the 'protective,' made by varnishing oiled silk on both sides and coating with starch, so that when dipped in the carbolized water some would be retained, and finally six or eight layers of the gauze and a pad of tow. On the third day the dressing was removed, and renewed under the carbolized spray, when most of the wound, which was between four and five inches long, was found to have healed by first intention. As I was a very lukewarm believer in this method, never having tried it, I left one angle of the wound open to allow drainage. Had I not done this, I think that I should have had union by first intention throughout the entire extent of the incision. During the time that the open part took to heal by granulation I do not think that there were twenty drops of pus discharged. Some of the catgut sutures I removed, others cut out, and one was partly absorbed, so that it came away as if the loop had been divided. Now, it is possible that I might have had this result by ordinary methods, but I certainly would have had more pus from the granulations, especially in a patient who warned me before the operation that former slight injuries had not healed readily. Nor is it likely that so large a wound, which from its position favored the collection of blood, pus, etc., would have healed in five days,—a result that I have no doubt I would have attained had I closed it entirely. I think, from the result of this case, and others in which I have adopted the method in part, that the reason it has so often proved unsuccessful is

because *all* the minutiae were not attended to. As to whether it is useful by excluding germs, as Mr. Lister originally thought, I do not pretend to know. Certainly the effects of exclusion of the air are well known, as in subcutaneous operations. The antiseptic method bids fair, in *some* way, to come nearer this than anything else that we know of at present."

The PRESIDENT remarked upon the apparently successful preservation of the color as well as the total absence of odor in the specimens thus preserved. The objection to all other preservatives, as chromic acid, bichromate of potassium, corrosive sublimate, and alcohol, lay in the fact that they either completely decolorized the specimen or added to it such intensity of color of their own that the original appearance could not be recognized. So, also, the shape was materially altered by these latter agents. There was less objection to solutions of arsenious acid on this score, though it possesses other objections in being deficiently preservative. He thought that the fact that chloral would permit the removal of specimens from the jars, and their examination, gave it extraordinary advantages.

Dr. R. M. BERTOLET said the objections to the use of this preservative fluid for preparations intended for microscopic study consisted in the fact that it did not harden the tissues placed in it.

Dr. JAMES TYSON had also used the chloral fluid for preserving specimens, and had recognized its deficiency in this respect. In other respects it answered well.

Dr. NANCREDE said that the sections exhibited of this tumor were hardened subsequent to their removal from the chloral fluid, and before the sections were made.

Dr. TYSON said that while the micro-photographs exhibited this evening were fair examples of their class, they presented the defects which he had always contended must attend attempts to photograph objects of any thickness whatever; that is, objects which required penetrating power and transitional focussing to bring out their points of structure. This could not be done, or at least had not yet been done with distinctness, in the micro-photograph. While he admitted, therefore, that photographs of very thin objects, as blood-corpuscles, might take the place of drawings with the camera, yet the latter, though immensely laborious, could alone supply the desideratum of an accurate picture when the object to be drawn presented any thickness.

Dr. F. P. HENRY presented a specimen of *cancer of the pylorus*, and read the following history: "The patient from whom this specimen of cancer of the pylorus was removed was an unmarried female, æt. 55, who had been under my care at different times for about four years. I first attended her in 1870, for rheumatism, from which she had suffered for more than twenty years. When I began to attend her she had been confined to her room for several years, being almost completely crippled by chronic rheumatism. All the joints had been affected, and the fingers were distorted so as to render them of little use. My efforts in the way of treatment were chiefly limited to relieving the acute exacerbations from which she frequently suffered, but, with the hope of achieving some more permanent success, and at the same time to remove the constipation, which was an important element in the case, I put her upon the use of Rochelle salts in drachm doses three times a day. Under this treatment she steadily improved, and in the summer of 1870 she descended the stairs for the first time in ten years. Whether this success was owing to the treatment or to the unusually warm weather of that year is of course an open question. This amelioration of the rheumatism was permanent. She remained free from any serious illness until I was called to attend her about the first of February of the present year. The symptoms at that time were

obstinate vomiting and constipation; but as she had been for a long time subject to transient attacks of acute indigestion, readily amenable to treatment, I at first anticipated nothing serious. The usual remedies not benefiting her, I began to suspect some organic trouble, and on palpating the abdomen I discovered a tumor about three inches to the right of and a little below the umbilicus, at about the junction of the umbilical and right lumbar regions. This tumor I proved to be disconnected from the liver by finding that there was tympanitic resonance on percussion between it and that viscus. It was hard, immovable, and somewhat tender. On pressure, pulsation was communicated to it from the abdominal aorta.

"As it was lower than we generally expect to find a tumor of the pylorus, the idea of a fecal tumor presented itself. The condition of the patient at that time was good: the pulse strong, and about 80. A pill containing two grains of aloes was administered three times a day, and on the third day operated freely three times, the discharges being fecal. The tumor was then examined, and no diminution in its size observed.

"Numerous remedies were employed to relieve the vomiting and nausea, among them the oxalate of cerium and the wine of ipecac in small doses,—the latter on the strength of Dr. Ringer's recommendation, in his work on Therapeutics. Neither of them was of the slightest service.

"The patient was seen by Dr. Howell, of Woodbury, N. J., in consultation, who, with Dr. Nancrede, was present at the autopsy. The stomach was found distended with fluid ingesta, and much below its normal position, the greater curvature descending more than an inch below the umbilicus. The pylorus was closed by a scirrhous thickening of its walls, but the resiliency of the tumor was so great that by using force the little finger could be forced through the duodenum. The thickening did not extend to the duodenum. The gall-bladder was distended with bile, and a large calculus could be felt through its walls. The microscopic examination made by Dr. Nancrede showed the characteristic fibrous alveoli of cancer crowded with large round cells. The specimen derives a further interest from the fact that it has been preserved nine days in a solution of hydrate of chloral, gr. xv ad 3i."

The PRESIDENT said that a point of unusual interest in connection with this case was the occurrence of carcinoma in a patient who had had rheumatoid arthritis. He did not remember ever to have met with the combination of carcinoma with this disease. He thought also that some writers on the subject of rheumatoid arthritis mentioned its tendency to exclude carcinoma.

Dr. W. G. PORTER presented, for Dr. J. G. ALLEN, a *calculus, bladder, ureters, and sacculated kidneys*, derived from a gentleman 76 years of age. Ten years ago, when in New York, he was suddenly seized with an attack of retention of urine, which was relieved by the catheter in the hands of an eminent surgeon of that city. The catheter was passed without difficulty, but the attack of retention was followed by cystitis, which laid him up for some time. Since then he frequently has had attacks of retention, and whenever an instrument was used for the relief of the patient, cystitis followed, although the catheter was always used carefully and by skilful hands. He thus acquired such a dread of all instrumental interference that of late years he would not allow a catheter to be used, and when he had retention he would go to bed and use opium suppositories until the urine began to dribble away. During all this time he suffered more or less from increased frequency of, or difficulty in, micturition; and finally died during one of the attacks of retention, with the bladder unrelieved.

*Post-mortem.*—On opening the abdominal cavity, the

distended bladder was found reaching about an inch and a half above the umbilicus, and uniformly adherent by its anterior surface to the abdominal wall. The adhesions were evidently not of recent formation; most of them were separated with some difficulty by the finger, some few bands requiring division with the knife. On opening the bladder, a large quantity of extremely ammoniacal urine escaped, and a calculus about the size of a walnut, weighing three drachms, was found; it was extremely rough and irregular on its surface, dark in color, and presented the appearance of what is known as a "mulberry calculus." The bladder was thickened, enlarged, and its interior surface was excessively ribbed. The prostate gland was very much hypertrophied, particularly its third lobe. The ureters were much enlarged and distended with urine. The left kidney was a mere membranous bag, containing urine, none of the secreting structure of the kidney apparently remaining. The right kidney contained a large cyst.

Dr. J. H. PACKARD asked whether there had ever been an attack of nephritic colic.

Dr. PORTER replied that the existence of stone had not been suspected.

The PRESIDENT said he hoped this specimen would elicit from the surgeons present some remarks as to the propriety of emptying the bladder by aspiration. He thought that, especially in consequence of the adhesions between the anterior wall of the bladder and the abdominal parietes, there would not have been any serious consequences in this case.

Dr. PORTER said that aspiration had been suggested in this case, but not tried. He had had experience in one case in which he had aspirated the bladder during his last term of service at the Presbyterian Hospital. The man had a very tight stricture, in which he could introduce no instrument, and after failing to catheterize he aspirated the bladder above the pubes. On the first occasion the relief was so great that the patient went to sleep during the operation. It was followed by no bad symptoms, and he was removed to the hospital the next day. After again failing to introduce the catheter during etherization, he again aspirated, with like good results. The next day, under the use of opium suppositories, the urine began to dribble away, and the man was so relieved that he eloped from the house, and had not been heard of since.

Dr. PACKARD said that he had had no personal experience with aspiration for the relief of retention of urine, but thought there was abundant testimony to its value, such as that given by Dr. Porter. He would like to ask whether the fact that catheterization, even performed with the greatest skill and care, was invariably followed by severe cystitis, would not have justified the suspicion of vesical calculus, in addition to the prostatic enlargement. It might seem as if a stone of any size would be apt to be detected accidentally, by the catheter striking it; but this would readily be prevented by the stone lying in the bas-fond of the bladder, behind the swollen prostate.

Dr. JOHN ASHHURST, JR., said that he had no personal experience in the use of the aspirator in cases of retention of urine, but believed its employment under such circumstances to be both safe and effectual. He should not, however, be disposed to resort to aspiration in any case in which, as in the present instance, catheterization could be readily effected. He did not think that the frequent recurrence of cystitis would necessarily lead to the suspicion that a calculus was present, for in cases of enlarged prostate, such as this, the bladder was seldom entirely emptied, and a condition of chronic cystitis, with vesical catarrh, was commonly set up,—a condition which would readily be converted into one of acute cystitis by very slight causes. Dr. Ashhurst



hoped that the stone found in this case would be submitted to careful examination; for, while its general appearance was that of a mulberry calculus, one of the phosphatic variety would be more naturally looked for in a case of urinary retention from prostatic enlargement. If, as was probably the case, the stone contained both phosphates and oxalate of lime, it would be interesting to know the proportions in which its several constituents were present.

Dr. PACKARD said that in the first volume of the Society's Transactions would be found a drawing of a stone of this character. The specimen was presented by Dr. J. Darrach, now of Germantown.

The stone was referred for analysis to a special committee consisting of Drs. Porter, Isaac Norris, and Hare, who reported May 28, 1874, as follows:

"The committee to whom was referred the chemical nature of the calculus exhibited at a stated meeting of the Society, would report that it is of the variety known as the mulberry calculus, and consists principally of calcium oxalate. Externally it presents the usual warty character, stained with blood, and is exceedingly hard. Before the blowpipe it is converted into a carbonate, and finally into lime. It dissolves in hydrogen chloride aided by heat, and more readily in hydrogen nitrate, and gives with the spectroscope the characteristic orange and green lines with the purple band in the more refrangible part, and with the liquid tests the usual reactions for a calcium salt. The presence of oxalic acid is also shown when boiled with potassium carbonate and the whole neutralized with an acid and a soluble lime salt added. All of which is respectfully submitted, and the committee ask to be discharged. Dr. Hare concurs in the above."

Dr. J. H. PACKARD presented the *viscera* obtained from the autopsy in the case of Mrs. T., who died four weeks after an amputation of the breast for cancer, the wound being almost completely healed. The death was preceded by about half an hour of increasing dyspnoea, she having been previously in perfect health in this respect.

Heart fatty; valves normal; aorta entirely free from atheromatous deposits. The heart was full of liquid blood, as were also the aorta, vena cava, and blood-vessel system generally.

The pulmonary arteries were full of firm clot; that in the right branch being firmer, and occluding the vessel more completely, than that in the left. On the right side the clot was traced through several successive ramifications of the vessel into the middle lobe of the lung. On the left side it was less extensive, and tended towards the lower lobe of the lung.

Lungs everywhere crepitant; perhaps somewhat emphysematous in the lower lobes. Old cicatrices existed at both apices, and in the left lung there was a very small hardened tuberculous deposit.

The bronchial glands were much enlarged, and full of carbonaceous matter.

Liver in a very early stage of cirrhosis. Gall-bladder much thickened, and lobulated (or contorted?); quite white.

Pancreas irregularly thickened,—in some places hardened, and in others so soft as to tear readily.

Spleen quite diffuent; a thick sheet of white lymph over its anterior surface.

Left kidney and suprarenal capsule normal; right not examined.

The seat of the operation-wound was found almost entirely healed, and the neighboring tissues perfectly sound, and free from appearance of disease.

The explanation of the fatal result in this case seemed to be that, from some trifling exertion, the weak and fatty heart "slowed" its movements, when coagulation began to take place, especially, or perhaps only, in the

pulmonary artery, where the current was less forcible than in the aorta. The slight obstruction thus produced would still further embarrass the feeble right ventricle, and this circumstance would favor the closer blocking of the vessels. Hence, violent respiratory efforts would ensue, the blood not having access to the aerating organs, and death was the result of mechanical asphyxia.

Dr. PACKARD called attention to the fact that in this patient, the subject of cancer, there were evidences of the former occurrence of tuberculous deposit in the cicatrices at the top of each lung.

The viscera were referred to the Committee on Morbid Growths for further examination, who reported May 7, 1874, as follows:

"Your committee found in Dr. Packard's specimen a large-sized gall-stone impacted in the ductus choledochus, where it had caused the lining membrane to ulcerate. The portion of the tube lying in front of the foreign body was pervious, although its mucous membrane was very much swollen and congested. The gall-bladder itself was contracted, and contained a small quantity of thick, dark, grumous bile; its walls were covered with a layer of fat half an inch in thickness. The head of the pancreas was found very much indurated, and somewhat increased in size. This was found upon examination to be due to an excessive development of connective tissue between the normal secreting parenchyma."

## MEDICAL SOCIETY OF THE COUNTY OF ALBANY, NEW YORK.

SEMI-MONTHLY MEETING, MARCH 25, 1874.

THE PRESIDENT, DR. JOHN SWINBURNE, in the chair.

THE name of Dr. C. S. Merrill was proposed for membership, and referred to the appropriate committee.

Dr. ISAAC DE ZOUCHE read an elaborate paper on the subject of Hygiene in Relation to Hospitals. [We have space for only a few of his points.] In appropriating an old building for hospital purposes, or commencing a new one, the question of the greatest importance is that thorough drainage and sewerage be provided for at any cost. A soil saturated with moisture, even though it be from pure water, is a fruitful source of fever. If such is the result from the presence of moisture from pure water, how much more fatal the results when sewerage is allowed to collect about foundations, tainting the air and poisoning the water,—as it were, offering a premium to the angel of death to abide there!

In constructing a new hospital there would seem to be no excuse for overlooking such vital points, and yet the German Hospital in New York was built on a site which included an old drainage-stream. Malarial poison from this source so universally affected the patients that it was in serious contemplation by its trustees at one time to abandon its use for hospital purposes. So universal was the fact that patients entering it contracted malarious disease, that it became the ordinary practice to administer quinine to its inmates as a prophylactic immediately upon their admission.

Blood-poisoning is another form of the various manifestations of defective ventilation.

The walls and ceilings may be whitewashed a dozen times a year, and you may spend a fortune in the use of disinfectants, but the fact will force itself on you that every year, notwithstanding the great advance made in surgery proper, the proportion of fatal cases does not grow smaller, but the reverse.

The remedy seems to lie in the establishment of hospitals beyond city limits, where a large amount of space may be secured at comparatively small cost.

The building should be only one story high, with ventilation amply provided for at the apex of the roof; undoubtedly the pavilion-plan is the best. Such a plan has been carried out at Leipsic, as I learn by an admirable article in the *New York Evening Post* of March 23. At the gates of Leipsic there is an immense shed-hospital consisting of fourteen large "sheds," if such a name can be given to what are really handsome pavilions. They are detached, one-story, substantial frame buildings, filled in with brick, connected through an ante-chamber by a gallery, and facing a garden. They are one hundred feet by thirty-two feet in size inside, with a height of fifteen feet to the eaves and of twenty feet to the roof-ridge.

They stand sixty feet apart, are raised on stone piers four feet higher for the sake of ventilation. There are also ridge-ventilators, with movable sashes to furnish protection from cold during a part of the day in winter. Each "shed" has twenty-four beds, with nurses' room, baths, kitchen, and closets complete. There are isolated sheds for contagious diseases. No lying-in women are admitted. During twelve months, from August, 1872, to 1873, Professor Wiersch, who has direction of the surgical clinic, performed two hundred and sixty-six serious operations and did not lose a case from pyæmia, while prior to the construction of the pavilions, in the old stone hospital, which is now the central building, he lost from forty to fifty amputations from this cause annually.

The more space for free circulation of air our hospitals can secure, the nearer we can come to the Leipsic model, the better will be the economical and sanitary results.

Dr. D. T. CROTHEN then read an elaborate paper on Inebriation, its Pathology and Treatment.

[This is also crowded out of our columns.]

## REVIEWS AND BOOK NOTICES.

OUTLINES OF COMPARATIVE ANATOMY AND MEDICAL ZOOLOGY. By HARRISON ALLEN, M.D. Second Edition. J. B. Lippincott & Co.

The success of this brochure of Prof. Allen is a very favorable indication of a growth in desire for abstract science somewhere in America; unless, indeed, as may have been the case, the book has sold largely abroad. These outlines bear about the same relation to an expanded work upon the subject, that pemmican does to good beef,—everything there, but everything reduced to the lowest state of condensation and dryness; the strength preserved, but the attractiveness to the palate reduced to a minimum. The book would have been a perfect godsend to the redoubtable Gradgrind, for, excepting the dictionaries, there are more facts in it than in any other book near its size we know of in the language. In the space of one hundred and thirty-six pages of not very fine print is contained almost everything about comparative anatomy worth knowing. To those coaching for an examination, the book, it seems to us, would be invaluable; and we can also highly commend it to any one who wants a brief but succinct and a cheap but satisfying work of reference upon the subject of which it treats.

M. PANAS has used solutions of "chloride of lime," or chlorinated water, very successfully in the treatment of varicose ulcers. The solution is applied on lint, and renewed frequently until healthy action is set up, when epidermic transplantation may appropriately be performed to hasten cicatrization.

## GLEANINGS FROM OUR EXCHANGES.

DOUBLE DIAPHRAGMATIC RUPTURE AND HERNIA (*New York Medical Journal*, April, 1874).—Dr. John M. Woodworth reports the case of a man who was suddenly attacked with severe pain of a colicky nature, in the region of the umbilicus, exacerbating at intervals. His pulse was slightly accelerated; there was no vomiting; two grains of quinia with one-fourth grain of morphia gave immediate relief. On the evening of the same day his symptoms were those of an acute attack of pleurisy: sharp pain located in the left side about the eighth rib, impaired respiration, little cough, full, rapid pulse, and moist skin. He was given morphia hypodermically, and a mixture of calomel, jalap, and Dover's powder. The next day he felt better, took some Rochelle salts and castor oil, and had a copious discharge from the bowels. The following day the pain still remained; there was dullness on percussion over the whole left chest, with the exception of the seat of pain, which was resonant. The day after, he was suddenly seized with nausea, vomited slightly for the first time, and then lay down and died.

At the post-mortem examination, there was found a double hernia of the intestine and omentum, through a double rupture of the diaphragm to the left of the œsophageal opening. The left lung was completely collapsed; sections from it would not float. Ten days previous to his death, he had been engaged in pushing heavy planks up a steep gangway, having their weight full against his abdomen. He had felt a sudden snap inside, and had then felt faint, but had soon gone to work again.

THE TREATMENT OF SYPHILIS (*The Lancet*, April 25, 1874).—Dr. Spender has arrived at the following conclusions from his experience in the treatment of syphilis.

1. In the second or exanthematous stage of syphilis, it is almost always useful to administer mercury and iodide of potassium simultaneously. Ten grains of the iodide, with a grain and a half of gray powder or blue pill, should be given three times a day.
2. The "intermediary squamous syphilides" are best treated with perchloride of mercury, which should be given in compound tincture of cinchona.
3. The early tertiary symptoms of syphilis are often strikingly relieved by the soluble iodide of mercury, or rather by that double compound of iodine and mercury which is formed by adding iodide of potassium to a solution of perchloride of mercury. It is impossible to praise too highly the therapeutic qualities of this medicine.

CURES FOR THE OPIUM-HABIT (*The Peninsular Journal of Medicine*, April, 1874).—Professor Albert B. Prescott, of the University of Michigan, has examined three of the various articles advertised as infallible cures for the opium-habit. The first was a pink liquid containing meconic acid and narcotina, but no morphia, and was therefore essentially opium with the morphia taken out. The second and third were colored and flavored solutions of sulphate of morphia, on which the proprietors made immense profits.

## OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U.S. ARMY, FROM MAY 26 TO JUNE 1, 1874, INCLUSIVE.

SURGEON JOHN MOORE, and ASSISTANT-SURGEONS J. J. WOODWARD and J. S. BILLINGS, directed to attend the Annual Meeting of the American Medical Association at Detroit, Michigan, on June 2, and on its adjournment rejoin their proper stations. S. O. 118, A. G. O., May 28, 1874.